IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: GANDEL; Pierre

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TITLE: LINEAR ACTUATOR COMPRISING A BRUSHLESS POLYPHASE ELECTRIC MOTOR

Amendment B: CLAIM AMENDMENTS

Claims 1 - 13 (canceled). These claims were canceled by an earlier amendment.

Claims 14 - 24 (canceled). These claims are canceled by the present amendment.

25. (new) A linear actuator apparatus comprising:

a brushless reversible multiphase synchronous electric motor having a stator and a rotor;

a control organ having a retracted position and an extended position relative to said electric motor;

a driving means for converting a rotational movement of said electric motor into a linear displacement of said control organ so as to drive said control organ from said retracted position toward said extended position over several revolutions of said electric motor, said driving means being reversible;

a restoring means cooperative with said control organ for restoring said control organ to said retracted position when a power supply to said electric motor is interrupted, said restoring means being a spring or a magnet, said restoring means acting at least partially directly onto said control organ so as to restore said control organ via said driving means into said retracted position;

a position detection means on said electric motor for adjusting a position of said rotor and said control organ between said retracted position and said extended position, said driving means having an independent reversible reduction means cooperative therewith.

26. (new) The apparatus of Claim 25, said restoring means having said spring or said magnet for controlling a rotation of said rotor so as to restore said control organ to said retracted position.

27. (new) The apparatus of Claim 25, said restoring means having said spring or said magnet acting directly on said control organ so as to restore said control organ to said retracted position.

28. (new) The apparatus of Claim 25, said restoring means comprising a first said spring or said magnet for controlling the rotation of said rotor and a second said spring or said magnet acting directly on said control organ so as to restore said control organ to said retracted position.

29. (new) The apparatus of Claim 25, said driving means comprising a screw and nut system in which said rotor has an axial bore, said axial bore having the nut therein, the screw being a threaded rod engaged coaxially with the nut.

30. (new) The apparatus of Claim 29, said nut being carried by said rotor, said threaded rod being fixed, said nut being movable in a helical direction under said stator, said nut transmitting linear displacement to said control organ.

31. (new) The apparatus of Claim 29, said screw-and-nut system having a ball screw.

32. (new) The apparatus of Claim 25, said driving means having a roller and a cam, said roller being cooperative with said control organ and driven by said cam, said cam being driven by said rotor.

33. (new) The apparatus of Claim 25, said driving means having a first cam and a second cam with crossed profiles, said first and second cams being rotatable at different speeds, said first and second cams acting on a roller so as to cause an axial sliding movement of said roller, said roller acting on said control organ, said roller being a pin member.

34. (new) The apparatus of Claim 25, said position-detection means having a plurality of magneto-sensitive elements integrated into said stator for detecting magnetic poles of said rotor.

35. (new) The apparatus of Claim 34, said position-detection means having a linear position sensor cooperative with said control organ.